TECHNICAL REVIEW DOCUMENT
FOR
SIGNIFICANT PERMIT MODIFICATION TO
OPERATING PERMIT 96OPBO174

to be issued to:

University of Colorado at Boulder, Williams Village
Boulder County
Facility ID 0130019

Cathy Rhodes
February, 2004

I. Purpose

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered by the renewal Operating Permit proposed for this site. This document is designed for reference during review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the application submitted January 9, 2004. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at http://www.cdphe.state.co.us/ap/Titlev.html. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

II. Source Description

The University of Colorado at Boulder (CU) consists of a Power House, a service building, a heating plant for a dormitory known as Williams Village, and miscellaneous insignificant activities around campus. CU requested separate Operating Permits for the Power House and the heating plant for Williams Village. The service building is classified as an insignificant source of emissions. The heating plant at Williams Village generates steam for use in heating and air conditions using two water tube boilers. The boilers have the capability to fire either natural gas or No. 2 fuel oil and share a common exhaust stack.

Williams Village is located at 600 30th Street in Boulder. The area in which the plant operates is currently designated as attainment/maintenance for carbon monoxide, particulate matter less than 10 μm and ozone. There are no affected states within 50 miles of the plant. The Federal Class I designated areas within 100 kilometers of the plant are Rocky Mountain National Park, Rawah Wilderness Area, and Eagle's Nest Wilderness Area.

This facility along with the Power House are considered a single source for PSD/NSR purposes. The Power House and Williams Village are a major source for PSD purposes (Power House Turbines >100 TPY and total facility >250 TPY).

I. Discussion of Modification

The Williams Village boilers were grandfathered from Construction Permit requirements. The Division has determined that the addition of an economizer to boiler B001 and the replacement of an economizer for B002 results in a significant net emissions increase above actual emissions that would trigger PSD requirements. The permittee has made application to take synthetic minor modification emission limits for the Williams Village boilers, as described below. Because this request is for a synthetic minor modification, it qualifies as a significant permit modification under the Operating Permit rules, and public notice and EPA review is required.

II. Requested Emission Limits

43.0 tons/year NO_x
47.0 tons/year SO_2
These emission rates are based on actual emission rates as follows, plus 39.9 tons/year, rounded down.

Actual emissions (TPY)

Pollutant	1998	1999	2000	2001	2002	Average*
NOx	3.39	3.26	3.48	3.56	1.84	3.52
SO_2	7.23	6.95	7.40	7.58	3.93	7.49

*Average based on last two years of operation. Division used 2000 and 2001 and did not include 2002 data, which does not coincide with more "normal" operation from previous years. Calculations are based on worst case fuel, in accordance with EPA Guidance Document PSD/98.

Maximum potential CO, VOC and PM/PM_{10} emissions from the boilers based on maximum design rate do not exceed the PSD significant emission level thresholds, therefore emission limits for these pollutants is not requested. Maximum potential emissions of these pollutants are as follows:

Total PTE for both units compared to the PSD significant levels (TPY):

Pollutant	Total PTE	Significant Level
NOx	51.86	40
CO	27.1	100
SO_2	110.49	40
VOC	1.77	40
PM	5.18	25
PM_{10}	2.29	15

III. Ambient Impact:

SCREEN3 was used to model the impact from SO_2 emissions for the source. (the 3

hour emission rate is above the Division's modeling guidance threshold). Impacts were estimated as follows:

Averaging Time	Modeled Impact	Impact + Background	Standard
3-hour (state)	180	333	700
3-hour (federal)	180	333	1300
24-hour	80	116	364
Annual	16	26	78

This source will not cause or contribute to the exceedance of any ambient air standard.

IV. Fuel Sulfur Content and Sampling

The current permit requires the sulfur and BTU content of the fuel oil to be determined through sampling each time fuel is transferred too the storage tank. SO_2 emissions for this permit are based on AP-42 emission factors, which require the sulfur content of the fuel. The permittee has requested that a maximum sulfur content of 0.05% be added to the permit. In addition, in lieu of sulfur sampling, the permit is modified to specify that compliance shall be met provided the fuel oil supplier's certification indicates that the fuel oil has a sulfur content no greater than 0.05 % by weight.

In addition, monitoring for the Regulation No.1 SO2 limit is revised to indicate that in the absence of credible evidence to the contrary, compliance is assumed when fuel oil with a maximum sulfur content of 0.05% is used. A fuel BTU content of no less than 15,500 BTU/gallon is assumed.

V. Alternative Operating Scenario

The permittee requests to operate a temporary boiler during maintenance and repair of the permitted boilers. An AOS is added to the permit to allow operation of a temporary boiler with a heat rate of 10.044 MMBTU/hour or less. All applicable requirements of the permit must be met. Hours of temporary boiler operation will not exceed 720 hours per year.